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(71) Applicant (for all designated States except US): **DUKE UNIVERSITY** [US/US]; Office of Science and Technology, P.O. Box 90083, Durham, NC 27708-0083 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **NIKLASON, Laura, E.** [US/US]; c/o Duke University, Office of Science and Technology, P.O. Box 90083, Durham, NC 27708-0083 (US). **MCKEE, J., Andrew** [US/US]; c/o Duke University, Office of Science and Technology, P.O. Box 90083, Durham, NC 27708-0083 (US). **COUNTER, Christopher, M.** [US/US]; c/o Duke University, Office of Science and Technology, P.O. Box 90083, Durham, NC 27708-0083 (US).

(74) Agent: **WILSON, Mary, J.**; Nixon & Vanderhye P.C., 1100 North Glebe Road, Suite 800, Arlington, VA 22201-4714 (US).

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**Published:**

— with international search report

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8 April 2004

**(15) Information about Correction:**

**Previous Correction:**

see PCT Gazette No. 50/2003 of 11 December 2003, Section II

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: TISSUE ENGINEERING

(57) Abstract: The present invention relates, in general, to tissue engineering and, in particular, to a method of extending the lifespan of cells suitable for use in vascular engineering.



WO 2003/078597 A3

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/08054

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A01N63/00;A61K48/00;C12N5/00,02,15/63,85,87  
US CL : 424/93.21;435/325,455

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/93.21;435/325,455

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,172,210 B1 (WIEDMER et al) 09 January 2001 (09.01.2001), see whole document, especially column 13.	1,2,3,5,6,29,31,32 ----- 4,9,10,11,12,13,14,15 16,17,18,19,20
X,P	US 2002/0098166 A1 (HAVEMANN et al) 25 July 2002 (25.07.2002), see whole document, especially pages 3 and 5-8.	1,2,3,4,5,6,7,8,9,10,11,29 and 31-32
A	KRUMP-KONVALINKOVA et al. Generation of human pulmonary microvascular endothelial cell lines Laboratory Investigation. 2001, Vol. 81, No. 12, pages 1717-1727.	1-29
A	CHEN et al. Production and characterization of human 293 cell lines expressing the site-specific recombinase Cre Somatic Cell and Molecular Genetics. 1996, Vol. 22, No. 6, 1996, pages 477-488.	1-29
Y,P	EATON et al. Immortalized chromaffin cells disimmortalized with Cre/lox site-directed recombination for use in cell therapy for pain and partial nerve injury Experimental Neurology, 2002, Vol. 175, pages 49-60.	1-32

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;"

document member of the same patent family

Date of the actual completion of the international search

12 August 2003 (12.08.2003)

Date of mailing of the international search report

14 JAN 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703)305-3230

Authorized officer

Brian Whiteman

Telephone No. (703) 308-0196

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/08054

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claim Nos.: 30  
  - because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
The product in Claim 30 depends on a claim that is directed to a method.
  
3. ☐ Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐  
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

**Continuation of B. FIELDS SEARCHED Item 3:**

WEST2.1, STN

search terms: vascular graft, immortalized cell, tissue engineering, immortalizing, vascular prosthesis, cell, cre-recombinase, viral promoter, tetracycline inducible promoter, htert, graft